



ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE

July 25, 2016

Robert Sprague
Mandarich Developments
4740 Rocklin Road
Rocklin, CA 95677

RE: Arborist Survey for The Grove, Town of Loomis, Placer County, California

Dear Robert:

The purpose of this letter is to document the existing trees within proposed project, The Grove (Project Site), evaluate impacts within the canopy of protected trees, and provide recommendations for tree preservation and mitigation. The Project Site is located at 3342 Humphrey Road in the Town of Loomis, California. The proposed project will include construction of 22 single-family residential lots, a detention basin, pocket park, and two landscape easements along Humphrey Road (Proposed Project). In 2005, an *Initial Arborist Report and Inventory Summary Report* was prepared by Sierra Nevada Arborists, and this arborist report is an update to the 2005 report for the Project Site.

The Town of Loomis (Town) regulates impacts to native oak trees under the *Loomis Municipal Code, Chapter 13.54 – Tree Conservation* (Tree Conservation Ordinance, Revised 2014). This policy applies to tree management in both new development projects and established residential areas. According to the policy, a protected tree is defined as any interior live oak (*Quercus wislizeni*), valley oak (*Quercus lobata*), or oracle oak (*Quercus x morehus*), with a trunk that is a minimum of six inches in diameter at breast height (DBH) as measured at four feet six inches from the ground and blue oaks (*Quercus douglasii*) with a four inch DBH or larger trunk, and any native oak tree with multiple trunks that have an aggregate DBH of at least ten inches, or any Heritage tree. Protected trees also include any trees preserved or replanted pursuant to *Section 13.54.090*, except for exempt trees and those classified as invasive species by the California Invasive Pest Council (Cal-IPC), such as olive trees (*Olea europaea*), and non-native trees listed as not to be planted on Town-owned property in the Master Tree List. In response to a request from Town planning staff in a letter dated June 16, 2016, other trees measuring great than 19-inch DBH are included as “protected trees” in this report, consistent with the previous version of the Tree Conservation Ordinance.

The Tree Conservation Ordinance requires a Tree Permit for the removal of any protected tree or work within the critical root zone (CRZ), which is defined as the diameter of the longest limb plus one foot. Mitigation is required for removal of protected trees. Mitigation may include planting replacement trees of the same species either on the property or at a location within

the Town of Loomis approved by the Town Manager or payment of in-lieu fees for each inch of trunk diameter removed. Mitigation is not required for removal of dead, dying, or hazardous trees or those requiring major corrective care.

Methodology

ISA-Certified Arborist, Charlotte Marks (WE-10519A), and Biologist Zach Neider conducted an arborist survey on June 29, 2016. All trees on or overhanging the project site or located within 25' of the site, where accessible, were examined to determine species, DBH, dripline radius (DLR), tree height, and overall health and structure. A diameter tape was used to verify each trunk diameter. The measurement from the trunk to the end of the longest lateral limb was used as the dripline radius. The overall health and structure of each tree was evaluated on a five-point scale ranging from Poor to Good. This corresponds to the 5-point scale outlined in the Tree Conservation Ordinance. The health rating considers factors such as the size, color, and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency, and insect infestation. The structural rating reflects the trunk and branch configuration; canopy balance; the presence of included bark and other structural defects such as decay; and the potential for structural failure. Each tree was individually numbered, which corresponds to the numbering in Figure 1 and Attachment A. Existing tag numbers were used whenever possible. If no tag could be located, then a pre-printed aluminum tag was used. Surveyed trees located off-site were not tagged, but were numbered sequentially starting at one (1).

Results

A total of 19 trees were surveyed within and surrounding the Project Site. Trees identified in the survey area include: eight valley oaks, six interior live oaks, three London planetrees, and two olives. Of the trees surveyed, 14 are protected oak trees under the Town Tree Conservation Ordinance, two are considered protected for planning purposes due to their large size, and three trees are not protected. Detailed tree data for all surveyed trees is included in Attachment A. The approximate locations of all surveyed trees and their driplines are shown on Figure 1.

Overall, the trees on the Project Site are in Fair to Fair-Good condition, but one interior live oak, one olive, and two London planetrees have Poor-Fair structure ratings. The interior live oak (#3001) has a severe lean, included bark, codominant branching and is surrounded by Himalayan blackberry (*Rubus armeniacus*). The olive (#3052) has trunk rot, a slight lean, trunk and limb cavities and damage. Two London planetrees (#3054 and #3055) have limb decay, nest cavities, bark scars, damage, and pruning cuts. Although failure of these trees does not appear imminent, these problems are expected to worsen over time, leading to their failure. Therefore, these trees are recommended for removal and do not require mitigation.

Proposed Project Impacts and Mitigation Assessment

The Proposed Project will remove one protected trees (#3054) and one non-protected tree (#3055). However, tree #3054 is recommended for removal due to poor condition and therefore, no mitigation is required.

Five trees along No Name Lane (#3000, #3044, #3045, #3057 and #3058) are anticipated to be preserved with no impacts. The two olive trees (#3052 and #3053) within the site are proposed for relocation and transplantation to the park site, adjacent to tree #3047. While no mitigation is required for these trees, it should be noted that tree #3052 has an overall poor-fair rating and may not survive transplantation.

The remaining nine trees are planned to be preserved, but may be impacted by development of the project within their CRZ. These trees may be indirectly impacted by the Proposed Project due to grading, trenching, compaction of the ground under their canopy, and pruning of their branches to allow construction equipment to access the site. Indirect impacts to these trees can be minimized by avoiding disturbance within the CRZ, including eliminating grading and installing utilities using boring or lateral drill techniques rather than traditional open trenches, and implementing other tree preservation recommendations provided in this report. If grading and other ground disturbance in the CRZ cannot be avoided, these trees may decline following construction of the project, depending on the extent of the disturbance to their root system.

Mitigation for impacts to protected oak trees is required in accordance with the *Loomis Municipal Code, Chapter 13.54.090*. Mitigation may take the form of on-site or off-site planting or payment of in-lieu fees. Mitigation planting must be of the same species removed. The in-lieu fee and number of mitigation trees required depends on the size of the tree removed and the size of the tree being planted, as shown in Table 5-3 of the Tree Conservation Ordinance. Smaller trees (T4, T6, or T8 tree pots) may be used in place of #5/ 5-gallon plantings with the approval of the Town Manager, but no more than 50 percent of the planted trees may be less than #5/ 5-gallon size. A combination of planting and in-lieu fees may be used to fulfill the mitigation requirements. Mitigation trees must be monitored by an ISA-Certified Arborist for five years after planting. The permittee is responsible for replacing any mitigation trees that die within the initial five-year monitoring period.

Table 1 summarizes the potential tree impacts and mitigation options. Once detailed grading plans are developed, a final evaluation of expected tree impacts should be completed.

Table 1 — Tree Impact and Mitigation Summary

Tree No.	Tree Species	DBH (Inches)	Protected Tree	Impact	Potential Mitigation Required		
					#5 (5 gal.) Trees	#15 (15 gal.) Trees	In-Lieu Fee
1	Valley Oak	10	Yes	Preserved; Potentially impacted by lot grading	40	20	\$1,000
2	Valley Oak	11	Yes	Reserved; Potentially impacted by lot grading	44	22	\$1,100
3	Valley Oak	10	Yes	Preserved; Potentially impacted by lot grading	40	20	\$1,000

Tree No.	Tree Species	DBH (Inches)	Protected Tree	Impact	Potential Mitigation Required		
					#5 (5 gal.) Trees	#15 (15 gal.) Trees	In-Lieu Fee
3000	Interior Live Oak	4.5, 4.5, 2.5	Yes	Preserved	None		
3001	Interior Live Oak	7, 3	Yes	Potentially impacted by lot grading and building	None; Recommended for removal due to poor condition		
3044	Interior Live Oak	3, 7	Yes	Preserved	None		
3045	Valley Oak	6	Yes	Preserved	None		
3046	Interior Live Oak	9, 15, 11	Yes	Preserved; Potentially impacted by lot grading and building	140	70	\$3,150
3047	Valley Oak	17	Yes	Preserved; Potentially impacted by lot grading and building	68	34	\$1,700
3048	Interior Live Oak	12, 12, 10	Yes	Potentially impacted by road improvements	136	68	\$3,060
3049	Interior Live Oak	15	Yes	Potentially impacted by road improvements	60	30	\$1,350
3050	Valley Oak	14, 13	Yes	Potentially impacted by road improvements	135	81	\$2,970
3052	Olive*	9, 6, 8, 10	No	Transplant on-site	None		
3053	Olive*	7, 9, 7, 6, 7	No	Transplant on-site	None		
3054	London Planetree	20	Yes	Removed	None; Recommended for removal due to poor condition		
3055	London Planetree	16	No	Removed	None		
3056	London Planetree	42	Yes	Preserved; Potentially impacted by road improvements and lot grading	No mitigation required under Tree Ordinance		
3057	Valley Oak	13	Yes	Preserved	None		
3058	Valley Oak	17	Yes	Preserved	None		

*Categorized as an invasive plant by the Cal-IPC database

The exact amount of mitigation required will depend on the final design of the project. If impacts to all potentially impacted trees are avoided or minimized, then no mitigation will be required. If all potentially impacted trees are significantly impacted (changes to more than 20% of the CRZ), then the total mitigation required will be planting of 663 5-gallon trees, planting of 345 15-gallon trees, or payment of lieu fees totaling \$15,330.

While some mitigation tree planting may be completed on site in Lot A containing the detention basin, the park site, and landscaping areas along Humphrey Road, there is not sufficient space to accommodate all required mitigation trees. Therefore, it is anticipated that the majority of the required mitigation will be through payment of in-lieu fees.

If tree planting is chosen as the project mitigation strategy, a mitigation and monitoring plan should be prepared. The plan should include maintenance, watering, and monitoring schedules, success criteria, and reporting requirements. Typically, the trees will be regularly irrigated during the first two years until established and then weaned off irrigation over the course of the next two to three years. No permanent irrigation or landscaping should be placed within the dripline of any replacement tree or existing protected oak tree. Newly planted trees should be protected with browse protection cages and gopher cages and surrounded by a layer of bark mulch to reduce weed growth.

Tree Protection Recommendations

In addition to the construction measures previously discussed, the following recommendations should be integrated into the project plans to minimize impacts to protected oak trees:

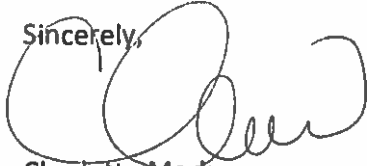
- Prior to any grading, movement of heavy equipment, approval of improvement plans, or the issuance of any permits, Tree Protection Fencing, shall be installed consisting of a minimum 4-foot tall high-visibility fence (orange plastic snow fence or similar), shall be placed around the perimeter of the tree protection zone (dripline radius +1 foot) for all trees to be preserved. The CRZ is the minimum distance for placing protective fencing, but tree protection fencing should be placed as far outside of the CRZ as possible. Fencing shall be removed following construction, but prior to installation of landscaping material;
- Whenever possible, fence multiple trees together in a single CRZ;
- Signs shall be posted on all sides of the fences surrounding each tree, stating that each tree is to be preserved;
- No parking, portable toilets, dumping or storage of any construction materials, including oil, gas, or other chemicals, or other infringement by workers or domesticated animals is allowed in the CRZ;
- Do not place or store any equipment or construction materials or allow flow of any oil, fuel, concrete mix or other deleterious substance into or over within the critical root zone (CRZ) of any protected tree;

- All trees located within 25 feet of structures shall be protected from stucco and/or paint during construction;
- Grading shall be designed to avoid ponding and ensure proper drainage within driplines of all trees;
- Minimize disturbance to the native ground surface (grass, leaf, litter, or mulch) under preserved trees to the greatest extent feasible. All brush, earth, and debris shall be removed in a manner that prevents injury to the tree;
- Avoid trenching, grading, paving, or otherwise damaging or disturbing any exposed roots within the critical root zone (CRZ) of a protected tree;
- If underground utilities and/or irrigation trenching encroach within the CRZ, they shall be bored or drilled under the root system of a protected tree. If this is impossible, trenching shall be completed by hand tools, air spades, or other acceptable measures under the supervision of an ISA-Certified Arborist. Boring machinery, boring pits, and spoils shall be set outside of the CRZ fencing;
- All work shall conform to the most current American National Standards Institute (ANSI) tree care standards;
- Do not severe major roots (1-inch or greater) unless permitted by an ISA-Certified Arborist. Cut all roots, regardless of size, cleanly at the edge of ground disturbance with pruning instruments and keep moist until covered with soil;
- Pruning of living limbs or roots shall be done under the supervision of an ISA-Certified Arborist. All pruning should be done by hand, air knife, or water jet, in accordance with ISA standards using tree maintenance best practices. Climbing spikes should not be used on living trees. Limbs should be removed with clean cuts just outside the crown collar;
- Native woody plant material (trees and shrubs to be removed) may be chipped or mulched on the Project Site and placed in a 4 to 6-inch deep layer around existing trees to remain. Do not place mulch in contact with the trunk of preserved trees;
- Any and all exposed roots shall be covered with protective material (e.g. damp burlap) during construction to prevent drying out;
- No supplementary irrigation shall occur within six feet of the dripline of any protected native oak;
- No signs, ropes, cables, or any other item shall be attached to a protected tree; and

- No burning or use of equipment with an open flame may occur near or within the protected perimeter. Appropriate fire prevention techniques shall be employed around all trees to be preserved. This includes cutting tall grass, removing flammable debris within the TPZ, and prohibiting the use of tools that may cause sparks, such as metal blade trimmers or mowers.

Please do not hesitate to call me at (916) 435-1202 or e-mail me at cmarks@foothill.com if you have any questions about this report.

Sincerely,

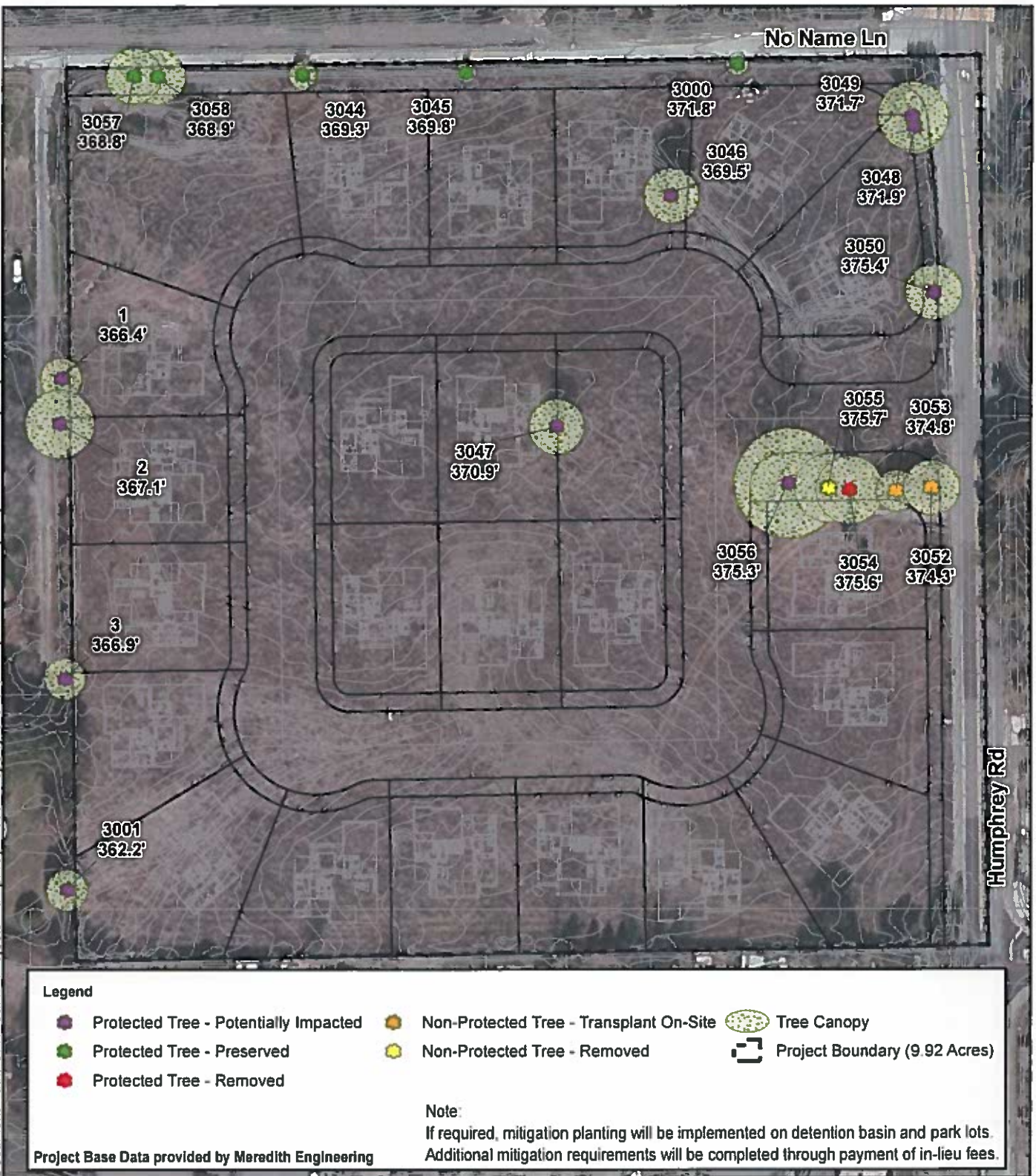
A handwritten signature in black ink, appearing to read 'Charlotte Marks', written over a large, stylized circular flourish.

Charlotte Marks

ISA-Certified Arborist #WE-10519A

Enclosures (2)

Document Path: O:\N CalH Projects\Humphrey Road Property\GIS\GIS Project Files\HumphreyRd Tree PropProj 20160701.mxd



APPROXIMATE TREE LOCATIONS AND PROPOSED PROJECT

Drawn By: MUB Date: 07/25/2015 © 2016	 0 100 200 Feet 1 inch = 100 feet	FIGURE 1
 FOOTHILL ASSOCIATES ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE		
Arborist Name: Charlotte Marks Foothill Associates 590 Menlo Dr Ste 5 Rocklin CA, 95765 Phone: 916-435-1202 Fax: 916-435-1205		

Attachment A Tree Survey Data

Tree #	Species	DBH (Inches)	DLR (Feet)	Height (Feet)	Health Condition	Structure Condition	Protected?	Impacted	Notes
1	Valley Oak	10	15	35	Fair-Good	Fair-Good	Yes	Preserved; Potentially impacted by lot grading	no tag, included bark, minor dieback
2	Valley Oak	11	25	30	Fair-Good	Fair-Good	Yes	Preserved; Potentially impacted by lot grading	no tag, included bark, minor dieback
3	Valley Oak	10	15	35	Fair-Good	Fair-Good	Yes	Preserved; Potentially impacted by lot grading	no tag, included bark, dieback, bark damage
3000	Interior Live Oak	4.5, 4.5, 2.5	8	12	Fair-Good	Fair	Yes	Preserved	codominant branching, included bark, minor pruning cuts
3001	Interior Live Oak	7,3	15	25	Fair-Good	Poor-Fair	Yes	Preserved; Potentially impacted by lot grading and building	severe lean, blackberry, included bark, minor dieback, codominant branching
3044	Interior Live Oak	3,7	10	20	Fair-Good	Fair	Yes	Preserved	codominant branching, included bark, dieback, blackberry
3045	Valley Oak	6	7	15	Fair-Good	Fair-Good	Yes	Preserved	trunk wound, included bark, minor dieback
3046	Interior Live Oak	9, 15, 11	20	40	Fair-Good	Fair	Yes	Preserved; Potentially impacted by lot grading and building	avian nest [active], codominant branching, included bark, dieback, mistletoe
3047	Valley Oak	17	20	40	Fair	Fair	Yes	Preserved; Potentially impacted by lot grading and building	included bark, woodpecker holes, exfoliating bark, minor limb rot, bark damage, dieback, epicormic growth
3048	Interior Live Oak	12,12,10	20	30	Fair-Good	Fair	Yes	Potentially impacted by road improvements	included bark, codominant branching, dieback, bark scar, lead pipe at base, utility lines
3049	Interior Live Oak	15	25	25	Fair-Good	Fair	Yes	Potentially impacted by road improvements	included bark, bark damage, codominant branching, pruning cut, dieback, utility lines/pole
3050	Valley Oak	14,13	20	30	Fair-Good	Fair	Yes	Potentially impacted by road improvements	dieback, included bark, codominant branching, utility lines
3052	Olive	9,6,8,10	20	25	Poor-Fair	Poor-Fair	No	Transplant on-site	trunk rot, slight lean, trunk and limb cavities, sapsucker damage, suckers at the base, dieback, bark damage
3053	Olive	7,9,7,6,7	15	25	Fair-Good	Fair	No	Transplant on-site	trunk cavity, included bark, codominant branching, bark damage, minor trunk rot
3054	London Planetree	20	25	40	Fair	Poor-Fair	Yes	Removed	slight lean, pruning cuts, limb decay, bark scar, dieback, nest cavities, included bark, bark damage, asymmetrical canopy
3055	London Planetree	16	25	35	Fair	Poor-Fair	No	Removed	pruning cuts, dieback, nest cavities, limb decay
3056	London Planetree	42	40	50	Fair-Good	Fair-Good	Yes	Potentially impacted by road improvements and lot grading	embedded wire, rope and wood in the trunk, included bark, pruning cuts, mild trunk rot, bark damage, weighted branches
3057	Valley Oak	13	20	45	Fair	Fair	Yes	Preserved	minor blackberry, dieback, pruning cuts, minor limb rot, bark damage
3058	Valley Oak	17	20	45	Fair	Fair	Yes	Preserved	pruning cuts, included bark, utility lines, minor blackberry, limb rot, minor fungus